

**REMARKS**

Reconsideration of presently solicited method Claims 21 to 40 respectfully is requested. For the reasons indicated in detail hereafter, the Application is urged to be in condition for allowance.

The continued rejection of the presently solicited claims under 35 U.S.C. § 112, second paragraph, would be lacking a sound basis. In an effort to expedite prosecution, the previous set of claims has been replaced by new Claims 21 to 40. Each new claim corresponds to a previous claim with twenty being added to the claim number. In accordance with the request of the Examiner, express antecedent basis is provided throughout the claims. The withdrawal of the rejection is urged to be in order and respectfully is requested.

Applicant has provided an improved integrated method for preparing mechanically defibered bleached wood pulp. The strongly alkaline alkali metal aluminate (e.g., sodium aluminate) utilized with peroxide during the bleaching step is efficiently recovered as ash following combustion in the absence of the formation of a melt and when dissolved in water is efficiently recycled to the bleaching step. Also, it has been found that hydrogen peroxide bleached mechanical pulps prepared in accordance with the present process darken at a slower rate when exposed to light than when bleached in the presence of sodium hydroxide.

It respectfully is submitted that a detailed different reading of the references poses no *prima facie* obviousness with respect to Applicant's specifically claimed contribution.

The continued rejection of presently solicited Claims 21, 25 to 27, 32 and 36 as being directed to obvious subject matter under 35 U.S.C. § 103(a) over the

different teachings of U.S. Patent No. 4,116,759 to Janson in view of the different teachings of U.S. Patent No. 4,260,452 to Krüger et al. would be lacking sound technical and legal bases.

As recognized by the Examiner at the middle of Page 3 of the Official Action, Janson is concerned with markedly different technology than that which is the contribution of Applicant. It is stated:

Janson does not disclose that the pulp is mechanically defibered, or that it is bleached with peroxide and washed (underlining added)

Janson, contrary to Applicant, is concerned exclusively with the bleaching of chemical pulp from which lignin and hemicellulose has already been substantially removed. See, for instance, the use of "Delignification" in the title of Janson. On the contrary, in the present process the starting material is mechanically defibered wood chips which contain a major quantity of lignin when the specifically defined bleaching step is conducted. Technology such as Janson which exclusively concerns the bleaching of a chemical pulp would be considered by those skilled in the art not to be relevant or otherwise applicable to the different bleaching of a mechanical/chemi-mechanical pulp. In chemical pulping the chemical treatment is used to eliminate constituents such as lignin and to thereby cause disintegration into component fibers. In the present process involving the bleaching of mechanically defibered pulp the aim is to remove colored material that is present in the lignin. Accordingly, this type of process sometimes is termed "lignin retaining bleaching". In all instances, Applicant utilizes a different starting material for the bleaching step and the overall claimed process is quite different from the bleaching of chemical pulp.

Janson teaches the use a salt of a "polybasic inorganic acid selected from the group consisting of  $\text{NaH}_2\text{BO}_3$  and  $\text{Na}_2\text{HBO}_3$ " as alkali. Experiments with phosphates are described. It is mentioned in passing at Col. 3, lines 35 to 37 of Janson "salts of other amphoteric electrolytes silicates and aluminates, such as might also be used". However, there is no description of how this could be carried out even in the different technology there contemplated. The process of Janson can be used in the recovery of alkali used when bleaching chemical pulp. As indicated at Col. 2, line 12, onward of Janson the sodium borate is intended to actively participate in the further delignification of the chemical pulp and not to obtain an alkaline condition during the peroxide bleaching of a mechanical pulp as in the presently claimed process of Applicant.

It further is apparent from the teachings of Janson that sodium borates used as alkali would often be expected to melt during the combustion of the residual liquor that there would be present and would lead to a complicated and not a simple recovery process. For instance, Janson contemplates a combustion temperature of "200 to 1500°C" (Col. 2, line 55) is contemplated. Sodium borate would be expected to melt at a temperature of about 900°C. Accordingly, a melt rather than the readily recoverable alkali aluminate ash of Applicant would form under such conditions.

The secondary reference of Krüger et al. also contains very specialized teachings that are incapable of remedying the deficiencies of the primary reference. Krüger et al. also contemplates in all instances the use of a different starting material which is sugar mill bagasse. The sugar mill bagasse is bleached with peroxide under alkaline conditions in the presence of sodium hydroxide. The bleached pulp from this unusual source is possibly dewatered by the use of a vacuum filter. There

is no teaching to remove the bleaching chemicals for subsequent recovery by any means and certainly no teaching of Applicant's specifically claimed improved integrated method for preparing mechanically defibered bleached wood pulp.

The obviousness rejection of Janson in view of Krüger et al. should be recognized to be an impermissible quintessential hindsight reconstruction of the real reference teachings. Even if the different and inadequate teachings of the references were combined, Applicant's specifically claimed contribution still would not result. The withdrawal of the rejection is urged to be in order and respectfully is requested.

The continued rejection of Claims 22, 30, 33, 34, 37, and 38 as being directed to obvious subject matter under 35 U.S.C. § 103(a) in view of the teachings of Janson and Krüger et al. further in view of the inadequate teachings of U.S. Patent No. 4,388,148 to Yahrmarkt et al. would be unsound. The readily apparent deficiencies of Janson and Krüger et al. are previously discussed above. It readily is acknowledged as confirmed by Yahrmarkt et al. that sodium aluminate has been proposed for use in the prior art during the mechanical refining of pulp. It must be recognized, however, that Yahrmarkt et al. just as the other publications contains absolutely no teaching or suggestion of Applicant's overall integrated process as presently claimed for preparing mechanically defibered bleached wood pulp wherein an alkali metal aluminate, such as sodium aluminate, is utilized in the peroxide bleaching step, is effectively recovered as ash, is dissolved in water, and is efficiently recycled to the bleaching step. Applicant's specifically claimed process is not taught or fairly suggested. The withdrawal of the rejection is urged to be in order and is respectfully requested.

The continued rejection of presently solicited Claims 23, 24, 31, and 35 as being directed to obvious subject matter under 35 U.S.C. § 103(a) over Janson, Krüger et al., and Yahrmarkt et al., further in view of Applicant's Specification at Page 2, line 17, would be lacking a sound basis. The deficiencies of Janson, Krüger et al., and Yahrmarkt et al. are previously identified. Any reference to impregnating chips with  $\text{Na}_2\text{SO}_3$  in the prior art even if read with the other references is totally lacking in the disclosure or suggestion of Applicant's specifically claimed contribution. Even if the different teachings of the references were considered in full, they would still be devoid of Applicant's specifically claimed overall contribution. The withdrawal of the rejection is urged to be in order and is respectfully requested.

The continued rejection of presently solicited Claims 28 and 39, as being directed to obvious subject matter under 35 U.S.C. § 103(a) over the real teachings of Janson and Krüger et al. further in view of the different teachings of U.S. Patent No. 5,302,246 to Nykanen et al. would be devoid of basic soundness. The deficiencies of Janson and Krüger et al. are previously discussed. The concentration and combustion of a different effluent in a different context again constitutes an impermissible quintessential hindsight reconstruction or reference teachings in a flawed attempt to arrive at Applicant's specifically claimed contribution. The withdrawal of the rejection is in order and respectfully is requested.

Likewise, the continued rejection of presently solicited Claim 40 as being directed to obvious subject matter under 35 U.S.C § 103(a) over the different teachings of Janson, Krüger et al., and Yahrmarkt et al., further in view of Nykanen et al. would be inappropriate. This claim includes all the limitations of independent Claim 21. To specify a solid content in a different context is meaningless with

respect to Applicant's overall improved integrated method for preparing mechanically defibered bleached wood pulp. Withdrawal of this rejection is in order and respectfully is requested.

Finally, the continued rejection of presently solicited Claim 29 as being directed to obvious subject matter under 35 U.S.C. § 103(a) over the different teachings of Janson, Krüger et al., and Nykanen et al., further in view of the different teachings of U.S. Patent No. 3,396,076 to Crosby et al. would not withstand detailed analysis. Basic deficiencies of Janson, Krüger et al., and Nykanen et al. are previously discussed. Claim 29 includes all the limitations of independent Claim 21. The concentration of an effluent in a different Kraft pulping process falls far short of suggesting Applicant's overall specifically claimed contribution. The withdrawal rejection is in order and respectfully is requested.

See *In re Rothermel et al.*, 47 CCPA, 866, 125 U.S.P.Q. 328, 331:

It is easy now to attribute to this prior art the knowledge which was first made available by appellants and then to assume that it would have been obvious to one having the ordinary skill of the art to make these suggested reconstructions. While such a reconstruction of the art may be an alluring way to rationalize a rejection of the claims, it is not the type of rejection which the statute authorizes. 35 U.S.C. § 103 is very specific in requiring that a rejection on the grounds the invention "would have been obvious" must be based on a comparison between the prior art and the subject matter as a whole at the time the invention was made.

Further, it is basic to the examination process that in order to establish *prima facie* obviousness of a claimed invention, all of the claim limitations including the specified combination of process steps must be taught or suggested by the prior art.

See M.P.E.P. § 2143.03 in this regard. To establish *prima facie* obviousness of a


claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (CCPA 1970).

If there is any remaining point that requires clarification prior to the allowance of the Application, the Examiner is urged to telephone the undersigned attorney so that the matter can be discussed and resolved.

Respectfully submitted,

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